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10/735,085	12/12/2003	Chihlung Lin	ALPINE.039AUS	1607

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EXAMINER	
SOMMERFELD, PAUL J	

ART UNIT	PAPER NUMBER
2168	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,085	LIN, CHIHLUNG	
	Examiner	Art Unit	
	Paul J. Sommerfeld	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/8/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4-6, 11, and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Wan (U.S. Publication 2003/0233618 A1).

As to claim 1, Wan teaches a data representation and retrieval method (lines 2-5 of paragraph [0006]), comprising the following steps of:

providing a primary data file which stores a large volume of recorded data where a location of each piece of recorded data is represented by an offset value (item 180 in Fig.1, lines 4-6, indicating primary XML data. Lines 5-16 of paragraph [0036] indicate that text items in the XML data are located using bit offsets. These offsets are calculated and stored in an index.);

providing a secondary data file which stores supplemental data for assisting to search and retrieve the recorded data from the primary data file (item 170 in Fig. 1,

lines 4-6 of paragraph [0032], indices point to terms in the stored data, allowing the terms to be located efficiently.);

accessing the secondary data file to retrieve supplemental data corresponding to search data specified by a user (lines 11-14 of paragraph [0006], using a query and a set of indices to provide a set of intermediate results.); and

accessing the primary data file at locations specified by offset values derived from the supplemental data and retrieving the recorded data therefrom (lines 17-21 of paragraph [0006], locating the components indicated by the intermediate results, and generating a final result set.).

As to claims 4 and 14, Wan teaches said recorded data in the primary data file are arranged in an alpha-numeric order (table B on page 7 shows the data arranged in an alpha-numeric order.).

As to claims 5 and 15, Wan teaches said search data is a string of alphabetical and numeral characters, and wherein said supplemental data for each search data is established in advance in the secondary data file (table D on page 12 shows the search data is a string of alphabetical and numerical characters. Lines 17-18 of paragraph [0036] indicate the supplemental data (indices) are established in advance.).

As to claims 6 and 16, Wan teaches said step of accessing the primary data file includes a step of generating offset data based on the supplemental data from the

secondary data file for accessing and retrieving the recorded data from the primary data file (lines 13-16, computing the offsets).

As to claims 8 and 18, Wan teaches said step of generating the offset data includes a step of consecutively incrementing the offset data by a minimum incrementing step or jumping a difference of offset values based on the supplemental data (table D on page 12, row 5, "Offset" column, shows incrementing the offset data in the expression 2h+a+e.).

As to claim 11, Wan teaches a data representation and retrieval apparatus (lines 2-5 of paragraph [0008]).

For the remainder of the claim, Applicant is referred to the remarks and discussions made regarding claim 1 above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan (U.S. Publication 2003/0233618 A1), and further in view of Bharawani et al (U.S. Patent Number 3,670,310).

As to claims 2 and 12, Wan teaches offset values showing locations of the recorded data carrying the search data in the primary data file (Wan lines 5-16 of paragraph [0036] indicate that text items in the XML data are located using bit offsets. These offsets are calculated and stored in an index.).

Wan does not explicitly teach said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data.

Bharawani et al teaches said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data (Fig. 8 "frequency count").

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the method of representing and retrieving data taught by Wan by the method of representing and retrieving data taught by Bharawani et al, because by storing a count of the number of the recorded data carrying the search data, the program can determine which of a group of keywords defining a data item to be retrieved occurs the least number of times (Bharawani et al col. 2 lines 33-37).

5. Claims 3, 7, 10, 13, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan (U.S. Publication 2003/0233618 A1), and further in view of Sasaki et al (U.S. Patent Number 5,920,541).

As to claims 3 and 13, Wan does not explicitly teach said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data, and a first offset value showing a first location of the recorded data carrying the search data in the primary data file, and flag data showing whether or not the recorded data carrying the search data are consecutively located in the primary data file.

Sasaki et al teaches said supplemental data for each search data in the secondary data file includes a number of counts of the recorded data carrying the search data, and a first offset value showing a first location of the recorded data carrying the search data in the primary data file, and flag data showing whether or not the recorded data carrying the search data are consecutively located in the primary data file (items 56c and 56d in Fig. 13, col. 8 lines 38-44, 56d is a flag that indicates that data blocks are recorded consecutively, 56c is a four-byte offset value that indicates the leading block number of the consecutively recorded blocks.).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the method of representing and retrieving data taught by Wan by the method of representing and retrieving data taught by Sasaki et al, because storing a flag indicating whether or not the recorded data are stored

consecutively decreases the amount of time required to retrieve consecutively stored data, since the consecutively stored data can be retrieved in a single operation.

As to claims 10 and 20, Wan does not explicitly teach said first offset value is described by four-byte data and said flag data is described by two-byte data, and wherein a most significant bit of the two-byte data shows whether or not the recorded data carrying the search data are consecutively located in the primary data file.

Sasaki et al teaches said first offset value is described by four-byte data and said flag data is described by two-byte data, and wherein a most significant bit of the two-byte data shows whether or not the recorded data carrying the search data are consecutively located in the primary data file (items 56c and 56d in Fig. 13, col. 8 lines 38-44, 56d is a flag that indicates that data blocks are recorded consecutively, 56c is a four-byte offset value that indicates the leading block number of the consecutively recorded blocks.).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the method of representing and retrieving data taught by Wan by the method of representing and retrieving data taught by Sasaki et al, because storing a flag indicating whether or not the recorded data are stored consecutively decreases the amount of time required to retrieve consecutively stored data, since the consecutively stored data can be retrieved in a single operation.

As to claims 7 and 17, Wan does not explicitly teach said flag data further shows a number of consecutive locations when the recorded data carrying the search data are consecutively located in the primary data file, and a difference of offset values between a current location of the recorded data and a next recorded data in the primary data file.

Sasaki et al teaches said flag data further shows a number of consecutive locations when the recorded data carrying the search data are consecutively located in the primary data file, and a difference of offset values between a current location of the recorded data and a next recorded data in the primary data file (col. 6 lines 43-46).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the method of representing and retrieving data taught by Wan by the method of representing and retrieving data taught by Sasaki et al, because storing a flag indicating whether or not the recorded data are stored consecutively decreases the amount of time required to retrieve consecutively stored data, since the consecutively stored data can be retrieved in a single operation.

6. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wan (U.S. Publication 2003/0233618 A1) in view of Bharawani et al (U.S. Patent Number 3,670,310), and still further in view of Stuart (U.S. Patent Number 5,613,110).

As to claims 9 and 19, Wan, as modified by Bharawani et al, still does not teach each of said offset values is described by four-byte data.

Stuart teaches each of said offset values is described by four-byte data (col. 2 lines 54-57).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified the method of representing and retrieving data taught by Wan, as modified by Bharawami et al by the method of indexing taught by Stuart, because having 4-byte offsets are capable of representing offset values up to 4 billion, which would enable large primary data files (i.e. up to 4 billion bytes) to be indexed (Stuart col. 2 lines 56-61).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent Number 5,375,235, issued to Berry et al, for teaching an indexing method storing the frequency and locations of data items stored in a database.
- U.S. Patent Number 6,349,308 B1, issued to Whang et al, for teaching an inverted index for retrieval in a database.
- Definition of inverted index, available online http://en.wikipedia.org/wiki/Inverted_index

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul J. Sommerfeld whose telephone number is 571 272-6545. The examiner can normally be reached on M-F 7:45 am - 4:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on 571 272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TIM VO
PRIMARY EXAMINER